

Title (en)

Epicyclic gear train integral sun gear coupling

Title (de)

Integrale Sonnenradkupplung in einem Planetengetriebe

Title (fr)

Couplage intégral de roue planétaire dans un train épicycloïdal

Publication

**EP 1837542 A2 20070926 (EN)**

Application

**EP 07251132 A 20070316**

Priority

US 39176406 A 20060322

Abstract (en)

A coupling system for connecting a sun gear (56) to a shaft (28) within a planetary gear train, includes a sun gear coupling (40) connecting the sun gear (56) to the shaft (28). The sun gear coupling (40) has at least one undulant flexible section (44) joined to an inflexible spindle (42) for accommodating misalignment between the sun gear (56) and the shaft (28). The flexible section (44) comprises a cylindrical ring (68) having a diameter greater than the diameter of the spindle (42), and joined to the spindle (42) by two longitudinally spaced apart diaphragms (70,72). The juncture between the diaphragms (70,72), the ring (68), and the spindle (42) is curved in cross section on an outer side to improve flexibility and minimize stress concentrations, and the inner sides (112,114) of the diaphragms (70,72) are straight edges which result in a non-symmetric contour of the diaphragm walls.

IPC 8 full level

**F16D 3/72** (2006.01)

CPC (source: EP KR US)

**F02C 7/36** (2013.01 - EP US); **F16D 3/72** (2013.01 - EP US); **F16H 3/00** (2013.01 - KR); **F16H 3/44** (2013.01 - KR); **F16H 3/66** (2013.01 - KR); **F05D 2260/40311** (2013.01 - EP US); **F16H 1/2845** (2013.01 - EP US); **Y02T 50/60** (2013.01 - EP US); **Y10T 29/49464** (2015.01 - EP US); **Y10T 29/49968** (2015.01 - EP US); **Y10T 29/49995** (2015.01 - EP US)

Cited by

FR3071023A1; ITTO20111202A1; EP2607695A1; FR2987402A1; US8986160B2; US10605112B2; US11313244B2; WO2008102101A3; WO2014137571A1; WO2019053371A1

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**EP 1837542 A2 20070926**; **EP 1837542 A3 20100526**; **EP 1837542 B1 20121010**; CA 2580171 A1 20070922; JP 2007255713 A 20071004; JP 5214897 B2 20130619; KR 20070095773 A 20071001; US 2007225111 A1 20070927; US 2009293278 A1 20091203; US 2009298640 A1 20091203; US 7591754 B2 20090922; US 7824305 B2 20101102; US 7950151 B2 20110531

DOCDB simple family (application)

**EP 07251132 A 20070316**; CA 2580171 A 20070301; JP 2007074319 A 20070322; KR 20070022764 A 20070308; US 39176406 A 20060322; US 53664209 A 20090806; US 53665009 A 20090806